

IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Cancelled)

2. (Currently Amended) ~~The method of claim 1 including further steps of:~~ A method of integrating wired and wireless packet/cell transmission networks with an ATM network, comprising the steps of:

connecting an intermediate ATM network with access stations of a wired/wireless large area networks, including steps of:

establishing signaling and information communication between a server node in the large area network and a gateway connected to the ATM network;

transmitting the signaling and information communication from the large area network to a gateway connected to one switch of the ATM at the gateway converting all information into a cell format for communication to a switch of the ATM network;

providing the ATM network processes to allow services and signaling to traverse the ATM network from the entry gateway to a terminating point node of the ATM network;

at the terminating point converting all information to a format suitable for the receiving station or network; and

providing a mobility server platform connected to the ATM network which accepts requests from a mobile station and directs such requests to various control elements of a communication network connected to varied wireless base stations.

3. (Currently Amended) ~~The method of claim 1 including further steps of:~~ A method of integrating wired and wireless packet/cell transmission networks with an ATM network, comprising the steps of:

connecting an intermediate ATM network with access stations of a wired/wireless large area networks, including steps of:

establishing signaling and information communication between a server node in the large area network and a gateway connected to the ATM network;

transmitting the signaling and information communication from the large area network to a gateway connected to one switch of the ATM at the gateway converting all information into a cell format for communication to a switch of the ATM network;

providing the ATM network processes to allow services and signaling to traverse the ATM network from the entry gateway to a terminating point node of the ATM network;

at the terminating point converting all information to a format suitable for the receiving station or network; and

providing a protocol conversion process for converting network packets into ATM cells.

4. (Currently Amended) ~~The method of claim including further steps of:~~ A method of integrating wired and wireless packet/cell transmission networks with an ATM network, comprising the steps of:

connecting an intermediate ATM network with access stations of a wired/wireless large area networks, including steps of:

establishing signaling and information communication between a server node in the large area network and a gateway connected to the ATM network;

transmitting the signaling and information communication from the large area network to a gateway connected to one switch of the ATM at the gateway converting all information into a cell format for communication to a switch of the ATM network;

providing the ATM network processes to allow services and signaling to traverse the ATM network from the entry gateway to a terminating point node of the ATM network;

at the terminating point converting all information to a format suitable for the receiving station or network; and

sending an attach request message from a mobile station (MS) to a SGSN to initiate mobile station service.

5. (Original) The method of claim 4 including further steps of:
returning an acceptance message from the SGSN to the MS to confirm mobile service.
6. (Original) The method of claim 5 including further steps of:
initiating a disconnect with a request from the MS directed to the SGSN.
7. (Original) The method of claim 6 including further steps of:
completing a disconnect with an acceptance from the SGSN to the MS.
8. (Original) The method of claim 4 including further steps of:
updating a MS location by an inquiry addressed to a home location register (HLR).
9. (Original) The method of claim 6 including further steps of:
initiating a disconnect includes a PDP context request addressed to a GSNN.
10. (Cancelled)
11. (Currently Amended) ~~The communication network as claimed in claim 10,~~
~~comprising:~~ A communication network in which wireless and wired networks are
integrated into an interacting unified entire network for providing end-to-end transport of
voice, data and multimedia in packet and cell format, comprising:
the unified entire network including:
a first communication network including at least one of wireless, wired, and IP
service;
an ATM network having one of its switch/routing nodes connected to the first
communication network by a gateway functioning to convert information of the first
network to an ATM cell format;

a mobility server platform (MSP) connected to a ATM switch/routing node and functioning to provide call and routing services from the gateway to terminating ATM switching /routing nodes;

terminal interfaces connecting ATM switch/routing nodes to wireless base stations and including protocol conversion to convert ATM cells to wireless protocol; and

the gateway connecting the ATM network to the first communication network including, a protocol conversion for converting frame relay packet format to ATM cell format.

12. (Original) The communication network as claimed in claim 11, comprising:

the gateway providing information fragmentation/defragmentation in transfer of information through the gateway.

13. (Original) The communication network as claimed in claim 11, comprising:

an interworking function (IWF) connected for converting signaling and service protocols into a form suitable for integrating these services into the ATM network.

14. (Currently Amended) ~~The communication network as claimed in claim 10,~~

comprising: A communication network in which wireless and wired networks are integrated into an interacting unified entire network for providing end-to-end transport of voice, data and multimedia in packet and cell format, comprising:

the unified entire network including:

a first communication network including at least one of wireless, wired, and IP service;

an ATM network having one of its switch/routing nodes connected to the first communication network by a gateway functioning to convert information of the first network to an ATM cell format;

a mobility server platform (MSP) connected to a ATM switch/routing node and functioning to provide call and routing services from the gateway to terminating ATM switching /routing nodes;

terminal interfaces connecting ATM switch/routing nodes to wireless base stations and including protocol conversion to convert ATM cells to wireless protocol; and
the mobility service platform (MSP) being further connected for interacting with a network connected to a home location register.

15. (Original) The communication network as claimed in claim 14, comprising:
the mobility service platform (MSP) being co-located with the GAGW.

16. (Currently Amended) ~~The communication network as claimed in claim 10,~~
~~comprising:~~ A communication network in which wireless and wired networks are
integrated into an interacting unified entire network for providing end-to-end transport of
voice, data and multimedia in packet and cell format, comprising:

the unified entire network including;
a first communication network including at least one of wireless, wired, and IP
service;

an ATM network having one of its switch/routing nodes connected to the first
communication network by a gateway functioning to convert information of the first
network to an ATM cell format;

a mobility server platform (MSP) connected to a ATM switch/routing node and
functioning to provide call and routing services from the gateway to terminating ATM
switching /routing nodes;

terminal interfaces connecting ATM switch/routing nodes to wireless base
stations and including protocol conversion to convert ATM cells to wireless protocol; and
a GPRS backbone IP network connected to the GAGW by a SGSN.

17. (Currently Amended) ~~The communication network as claimed in claim 10,~~
~~comprising:~~ A communication network in which wireless and wired networks are
integrated into an interacting unified entire network for providing end-to-end transport of
voice, data and multimedia in packet and cell format, comprising:

the unified entire network including;

a first communication network including at least one of wireless, wired, and IP service;

an ATM network having one of its switch/routing nodes connected to the first communication network by a gateway functioning to convert information of the first network to an ATM cell format;

a mobility server platform (MSP) connected to a ATM switch/routing node and functioning to provide call and routing services from the gateway to terminating ATM switching /routing nodes;

terminal interfaces connecting ATM switch/routing nodes to wireless base stations and including protocol conversion to convert ATM cells to wireless protocol; and
a MSC connected to the ATM network by an IWF.

18. (Currently Amended) ~~The communication network as claimed in claim 10,~~
~~comprising:~~ A communication network in which wireless and wired networks are
integrated into an interacting unified entire network for providing end-to-end transport of
voice, data and multimedia in packet and cell format, comprising:

the unified entire network including:

a first communication network including at least one of wireless, wired, and IP service;

an ATM network having one of its switch/routing nodes connected to the first communication network by a gateway functioning to convert information of the first network to an ATM cell format;

a mobility server platform (MSP) connected to a ATM switch/routing node and functioning to provide call and routing services from the gateway to terminating ATM switching /routing nodes;

terminal interfaces connecting ATM switch/routing nodes to wireless base stations and including protocol conversion to convert ATM cells to wireless protocol; and
a base station being connected to the ATM network by an IWF.

19. (Original) The communication network as claimed in claim 16, comprising:

a public data network connected to the GPRS backbone IP network by a GGSN.

20. (Cancelled)

21. (Currently Amended) ~~The communication network of claim 20, comprising:~~ In a communication network for providing voice, data and multimedia service, a method of integrating various wireless systems through an inner core ATM network, comprising the steps of:

coupling a plurality of base stations of multiple wireless systems via wired network interconnections, the coupling of wired network interconnections including:
integrating an ATM network with other networks through a gateway connected to an ATM switch/router device;

providing through the gateway switched/routed connections to various end terminations of an external network;

switching/routing calls and services received from the external network through the ATM network by controls supplied to switches/routers by a mobility server platform (MSP) connected to the ATM network;

connecting wireless stations to switching/router nodes of the ATM network by protocol conversion of signaling to that of the wireless stations; and

the gateway connecting a GPRS backbone IP network to an ATM backbone network at an ATM switch/router.

22. (Original) The communication network of claim 21, comprising:

the MSP connected to at least one ATM switch /router for controlling call and services routing from the GPRS to the BSs through out the ATM network.

23. (Original) The communication network of claim 22, comprising:

connecting base stations to the communication network through interworking functions (IWF) for converting service protocols to achieve network integration.